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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Gerhard Bonnet

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EXAMINER

BRAINARD, TIMOTHY A

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/501,842	Applicant(s) BONNET ET AL.	
	Examiner TIMOTHY A. BRAINARD	Art Unit 3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/28/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The terminal disclaimer filed on 3/5/2008 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 10/501843 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5, 6, and 21 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

2. Regarding claims 5, 6, and 21, the phrase "specifically" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

3. Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 8-10, 13 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Shanttil (US 5955992). Shanttil teaches (claim 1) a frequency shifted feedback emission source (abs) comprising a means to increase emission frequency

component beat intensity (fig 1, item 110 and col 6, lines 22-50), (claim 2) non-stochastic emission frequency component beat intensity increasing (col 3, line 50 to col 4, line 10), (claim 3 and 4) the means to increase emission frequency component beat intensity includes an injection laser (col 6, lines 22-50), (claim 5 and 19) the injection light source is configured to inject irradiation into a resonator of the frequency shifted feedback emission source (col 6, lines 22-50), (claim 9 and 10) the injection light source is configured for regular periodic modulation of intensity (col 6, line 60 to col 7, line 16), (claim 13) the frequency shifted feedback emission light source is a laser (abs). With respect to claim 8, it is inherent that the injection light source is configured for irradiation of the appropriate intensity because appropriate intensity is a qualitative term that does not further define the apparatus.

3. Claims 1-5, 8-10, 13, 15, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Mocker et al (US 5394238). Mocker teaches (claim 1) a frequency shifted feedback emission source (col 1, lines 43-59) comprising a means to increase emission frequency component beat intensity (fig 2b, item 44 and col 4, lines 44-68), (claim 2) non-stochastic emission frequency component beat intensity increasing (col 4, lines 44-68), (claim 3 and 4) the means to increase emission frequency component beat intensity includes an injection laser (col 4, lines 44-68), (claim 5 and 19) the injection light source is configured to inject irradiation into a resonator of the frequency shifted feedback emission source (col 4, lines 44-68), (claim 9 and 10) the injection light source is configured for regular periodic modulation of intensity (col 4, lines 44-68), (claim 13) the frequency shifted feedback emission light source is a laser (col 3, lines 40-54),

(claim 15) used as a distance measuring device (col 4, lines 31-43). With respect to claim 8, it is inherent that the injection light source is configured for irradiation of the appropriate intensity because appropriate intensity is a qualitative term that does not further define the apparatus.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shanttil in view of Mocker. Shanttil teaches a frequency shifted feedback emission source, comprising an injection laser source separate from said gain source and injecting optical energy into said frequency shifted feedback laser to increase the beat intensity of the emitted frequency components. Shanttil does not teach a frequency shifted feedback laser having a pump laser light source pumping optical, energy into gain medium to cause lasing. Mocker teaches a frequency shifted feedback laser having a pump laser light source pumping optical, energy into gain medium to cause lasing (col 3, lines 1-20). It would have been obvious to modify Shanttil to include a frequency shifted feedback laser having a pump laser light source pumping optical, energy into gain medium to cause lasing because it is merely a substitution of a well known equivalent with no new or unexpected results.

6. Claims 6, 7, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shanttil. With respect to claims 6 and 20, Shanttil does not teach of the injection light is configured for emission of irradiation of an irradiation frequency close to the upper or lower amplification threshold. It would have been obvious to modify Shanttil to include the frequency sifted feedback emission source characterized by the fact that the injection light is configured for emission of irradiation of an irradiation frequency close to the upper or lower amplification threshold because it is one of multiple design choices with no new or unexpected results. With respect to claim 7 and 21, Shanttil does not teach the injection light source for the irradiation of injection light is narrowband in reference to the amplification bandwidth of the frequency shifted feedback emission source specifically a width below 5% or 1% of the bandwidth of the amplification of the frequency shifted feedback emission source. It would have been obvious to modify Shanttil to include the frequency shifted feedback emission source characterized by the fact that the injection light source for the irradiation of injection light is narrowband in reference to the amplification bandwidth of the frequency shifted feedback emission source specifically a width below 5% or 1% of the bandwidth of the amplification of the frequency shifted feedback emission source because it would allow an operator to inject a light source that is close to only the frequency of interest.

7. Claims 11, 12, and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shanttil as applied to claims 1, 8, and 9 above, and further in view of Nakamura et al (optical frequency). Nakamura teaches phase of the injection light (frequency shifted feedback laser), (claim 11) the injection light is configured so at least

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temporally one linear modulation frequency variation takes place (frequency shifted feedback laser), (claim 12) the injection light is configured so that modulation lies in the magnitude order and/or close to the distances determined using the emission source and the given chirp rate from the frequency shifted feedback emission source is obtained (fig 5 and experimental set-up), (claim 15) a distance measurement configuration (abs), (claim 16) illuminating optics illuminate a surface to be investigated with light from the emission source to obtain a beat spectrum (fig 2 and frequency shifted feedback laser), (claim 17) optics to direct irradiation for the light source to a defined partial range (introduction), (claim 18) a process for operating a frequency shifted feedback emission light source characterized by the fact that the injection light source characterized by the fact that the beat intensity of the frequency components of the emitted irradiation are increased beyond what is achieved in a stationary condition through spontaneous emission (fig 5 and experimental set-up). It would have been obvious to modify Shanttil to include the injection light is configured so at least temporally one linear modulation frequency variation takes place, the injection light is configured so that modulation lies in the magnitude order and/or close to the distances determined using the emission source and the given chirp rate from the frequency shifted feedback emission source is obtained, illuminating optics illuminate a surface to be investigated with light from the emission source to obtain a beat spectrum, optics to direct irradiation for the light source to a defined partial range, a process for operating a frequency shifted feedback emission light source characterized by the fact that the injection light source characterized by the fact that the beat intensity of the frequency

components of the emitted irradiation are increased beyond what is achieved in a stationary condition through spontaneous emission because each is one of multiple design choices with no new or unexpected results. It would have been obvious to modify Shanttil to measure distances because it is one of multiple applications of a laser with no new or unexpected result.

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura as applied to claim 1 above, and further in view of Nigham Jr et al (US 5,991,317). Nakamura does not teach of the frequency shifted feedback emission source characterized by the fact that an optical fiber is used internally in the resonator. Higham Jr teaches of the frequency shifted feedback emission source characterized by the fact that an optical fiber is used internally in the resonator. It would have been obvious to modify Nakamura to include the frequency shifted feedback emission source characterized by the fact that an optical fiber is used internally in the resonator because it is one of multiple design choices with no new or unexpected results.

Response to Arguments

9. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMOTHY A. BRAINARD whose telephone number is (571) 272-2132. The examiner can normally be reached on Monday - Friday 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on (571) 272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. A. B./
Examiner, Art Unit 3662

/Thomas H. Tarcza/
Supervisory Patent Examiner, Art Unit 3662